

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) ~~A home network system, comprising:
a network based on a predetermined protocol;
at least one electric device connected to the network; and
a network manager connected to the network, for controlling and/or monitoring the electric device,
wherein the protocol comprises an application layer, a network layer, a data link layer and a physical layer,~~
A network electric device for communicating with other network electric device on a network by utilizing a protocol comprising an application layer, a network layer, a data link layer and a physical layer,
wherein the physical layer further comprises a special protocol for providing an interface with a dependent transmission medium, and the network layer further comprises a home code control sub-layer for managing a home code for network security when accessing the dependent transmission medium[[: and]],
wherein an application layer protocol data unit (APDU) is transmitted between the application layer and the network layer, a network layer protocol data unit (NPDU) is transmitted between the network layer and the data link layer and between the network layer and the home code control sub-layer, a home code control sub-layer protocol data unit (HCNPDU) is transmitted between the home code control sub-layer and the data link layer, and a data frame unit is transmitted between the data link layer and the physical layer,
wherein the NPDU comprises an NPDU header, the APDU and an NPDU trailer,
wherein the NPDU header comprises a start of packet (SLP) field, a destination address (DA) field, a sender address (SA) field, a packet length (PL) field and a network layer control (NLC) field,
wherein the NLC field comprises a service priority (SP) field, an NPDU header length (NHL) field, a protocol version (PV) field, a network layer packet type (NPT) field, a transmission counter (TC) field and a packet number (PN) field, and

wherein the NPT field is set as a first code for a request packet, a second code for a successful response packet, a third code for a failed response packet, a fourth code for a notification packet, and a fifth code for an interface with the home code control sub-layer.

2. (Currently Amended) The device system of claim 1, wherein the APDU comprises an APDU header and a protocol data unit (PDU).

3. (Canceled)

4. (Canceled)

5. (Currently Amended) The device system of claim 1, wherein the HCNPDU comprises a home code and the NPDU.

6. (Currently Amended) The device system of claim 1, wherein the data frame unit comprises a frame header, the NPDU or HCNPDU and a frame trailer.

7. (Currently Amended) The device system of claim 2, wherein the APDU header comprises an APDU length (AL) field, an APDU header length (AHL) field and an application layer option (ALO) field.

8. (Currently Amended) The device system of claim 7, wherein the APDU header AHL field has at least 3 bytes.

9. (Canceled)

10. (Currently Amended) The device system of claim [[9]]1, wherein the SLP field has 8 bits, the DA field has 16 bits, the SA field has 16 bits, the PL field has 8 bits and the NLC field has 24 bits.

11. (Currently Amended) The device system of claim [[9]]1, wherein the NPDU header is formed in order of the SLP field, the DA field, the SA field, the PL field and the NLC field.

12. (Canceled)

13. (Currently Amended) The device system-of claim [[12]]1, wherein the SP field has 3 bits, the NHL field has 5 bits, the PV field has 8 bits, the NPT field has 4 bits, the TC field has 2 bits and the PN field has 2 bits.

14. (Currently Amended) The device system-of claim [[12]]1, wherein the NLC field is formed in order of the SP field, the NHL field, the PV field, the NPT field, the TC field and the PN field.

15. (Currently Amended) The device system-of claim [[12]]1, wherein the SP field is set as a first code for transmitting an urgent message, a second code for transmitting a general data or an event message according to an online or offline status change, a third code for transmitting a general event message or a notification message for composing a network, and a fourth code for transmitting a data by download or upload mechanism.

16. (Currently Amended) The device system-of claim 15, wherein the first code is 0, the second code is 1, the third code is 2 and the fourth code is 3.

17. (Currently Amended) The device system-of either claim [[12]]1 or 13, wherein the upper 4 bits of the PV field form a version field, and the lower 4 bits thereof form a sub-version field.

18. (Canceled)

19. (Currently Amended) The device system-of claim [[18]]1, wherein the first code is 0, the second code is 4, the third code is 5, the fourth code is 8 and the fifth code is 13 to 15.

20. (Currently Amended) The device system-of claim [[12]]1, wherein the TC field is set as a first code showing initial transmission, and the first code is set to be increased by a predetermined size upon the retry request.

21. (Canceled)

22. (Currently Amended) The device system-of claim [[12]]1, wherein the PN field is set to be increased by a predetermined size in every new packet transmission, and to maintain a previous value in the same packet retry.

23. (Canceled)

24. (Currently Amended) The device system-of claim [[4]]1, wherein the NPDU trailer comprises a cyclic redundancy check (CRC) field for checking an error, and an end of LACP packet (ELP) field.

25. (Currently Amended) The device system-of claim 24, wherein the NPDU trailer is formed in order of the CRC field and the ELP field.

26. (Currently Amended) The device system-of claim 24, wherein the CRC field has 16 bits and the ELP field has 8 bits.

27. (Currently Amended) The device system-of claim 5, wherein the home code has 4 bytes.

28-54. (Canceled)